GOVERNMENT COLLEGE BAROTA GOHANA (SONIPAT)

Summary of Lesson Plans of College Faculty for Academic Session 2024 - 2025

Name of Assistant Professor:- Dr. AMIT RATHEE

Class:- BCA- 1st SEM. **From:- July, 24 – Dec., 24**

Subject:- "Computer Fundamentals & Problem Solving Using C" **Semester:- ODD Semester**

Credits (L:T:P):- 3:0:1 **Hours/ Week:- 5 (3+0+2)**

Months	Week	Topics/ Chapters to be Covered
July	4th week	Generations of Computers, Block Diagram along with its components, Applications of computers in various fields.
	5th week	Classification of computers, Input/ Output Devices.
August	1st / 2nd week	Memory: Concept of primary & secondary memory, Cache Memory, Secondary storage devices.
	3rd week	Introduction to computer networking, Network types, Network topologies.
	4th week	Internet and its applications; Operating system and its functions. **Revision/ Test (UNIT-1)**
	5th week	Problem definition, Program design, Debugging, Types of errors in programming, Techniques of Problem Solving- Flowcharting, Algorithms
September	1st week	History of C, Importance of C, Elements of C: C character set, identifiers and keywords.
	2nd week	Data types, Constants and Variables, Assignment statement, Symbolic constant, Structure of a C Program.
	3rd week	printf() & scanf() functions. Functions, Operators & Expression, type casting and conversion, operator hierarchy & associativity. **Revision/ Test (UNIT-2)**
	4th week	Decision making with IF statement, IF-ELSE statement
October	1st week	Nested IF statement, ELSE-IF ladder, switch statement, goto statement.
	2nd week	While, do-while and for loop, jumps in loops, break, continue statement, Nested loops. **Revision/ Test/ Presentation (UNIT-3)**
	3rd week	Standard Mathematical functions, Input/output: Unformatted & formatted I/O function in C, Input functions output functions
	4th week	String manipulation functions. User defined functions: Introduction/Definition, function prototype, Local and global variables, passing parameters, recursion.
November	1st / 2nd week	Arrays & Pointers: Definition, types, initialization, processing an array, passing arrays to functions.
	3rd week	Declaration and initialization of string, Input/output of string data, Introduction to pointers.
	4th week	**Revision/ Test (UNIT-4)**

GOVERNMENT COLLEGE BAROTA GOHANA (SONIPAT)

Summary of Lesson Plans of College Faculty for Academic Session 2024 - 2025

Name of Assistant/Associate Professor:- Dr. AMIT RATHEE

Class:- BCA- 2nd SEM. **From:- July, 24 – Dec., 24**

Subject:- "Data Structure- 1" (BCA-202) **Semester:- ODD Semester**

Credits (L:T:P):- ---- **Hours/ Week:- -----**

Months	Week	Topics/ Chapters to be Covered
July	4th week	Introduction: Elementary data organization, Data Structure definition,
	5th week	Data type vs. data structure,
August	1st / 2nd week	Categories of data structures, Data structure operations, Applications of data structures
	3rd week	Algorithms complexity and time-space tradeoff, Big-O notation.
	4th week	Strings: Introduction, Storing strings, String operations, Pattern matching algorithms. **Revision/ Test (UNIT-1)**
	5th week	Arrays: Introduction, Linear arrays, Representation of linear array in memory, address calculations,
September	1st week	Traversal, Insertions, Deletion in an array, Multidimensional arrays, Parallel arrays, Sparse arrays.
	2nd week	Linked List: Introduction, Array vs. linked list, Representation of linked lists in memory, Traversal, Insertion, Deletion,
	3rd week	Searching in a linked list, Header linked list, Circular linked list, Two-way linked list, Threaded lists, Garbage collection, Applications of linked lists. **Revision/ Test (UNIT-2)**
	4th week	Stack: Introduction, Array and linked representation of stacks
October	1st week	Operations on stacks, Applications of stacks: Polish notation, Recursion.
	2nd week	Queues: Introduction, Array and linked representation of queues,
	3rd week	Operations on queues, Deques, Priority Queues, Applications of queues. **Revision/ Test/ Presentation (UNIT-3)**
	4th week	Tree: Introduction, Definition, Representing Binary tree in memory, Traversing binary trees, Traversal algorithms using stacks.
November	1st / 2nd week	Graph: Introduction, Graph theory terminology, Sequential and linked representation of graphs.
	3rd week	**Revision/ Test (UNIT-4)**
	4th week	**Revision**

GOVERNMENT COLLEGE BAROTA GOHANA (SONIPAT)

Summary of Lesson Plans of College Faculty for Academic Session 2024 - 2025

Name of Assistant/Associate Professor:- Dr. AMIT RATHEE

Class:- B.Sc. (Physical Science)- 1st SEM. **From:- July, 24 – Dec., 24**

Subject:- "Computer Fundamentals & C Programming" **Semester:- ODD Semester**

Credits (L:T:P):- 2:0:2 **Hours/ Week:- 6 (2+0+4)**

Months	Week	Topics/ Chapters to be Covered
July	4th week	Overview of computing fundamentals principles and history, Generations of Computers, Block Diagram along with its components.
	5th week	Applications of computers in various fields, Classification of computers, Input/ Output Devices.
August	1st / 2nd week	Memory: Concept of primary & secondary memory, Cache Memory, Secondary storage devices.
	3rd week	Introduction to computer networking, Network types, Network topologies.
	4th week	Internet and its applications; Operating system and its functions. **Revision/ Test (UNIT-1)**
	5th week	Basics of algorithmic thinking and problem-solving strategies. Planning the Computer Program: Problem definition, Program design, Debugging, Types of errors in programming.
September	1st week	Techniques of Problem Solving- Flowcharting, Algorithms, History of C, Importance of C, Elements of C: C character set, identifiers and keywords.
	2nd week	Data types, Constants and Variables, Assignment statement, Symbolic constant, Structure of a C Program.
	3rd week	printf() & scanf() functions. Functions, Operators & Expression, type casting and conversion, operator hierarchy & associativity. **Revision/ Test (UNIT-2)**
	4th week	Decision making with IF statement, IF-ELSE statement, Nested IF statement, ELSE-IF ladder
October	1st week	Jumps in loops, break, continue statement, Nested loops, switch statement, goto statement, While, do-while and for loop,
	2nd week	Standard Mathematical functions, Input/output: Unformatted & formatted I/O function in C, Input functions output functions.
	3rd week	String manipulation functions. User defined functions: Introduction/Definition, function prototype, Local and global variables, passing parameters, recursion. **Revision/ Test/ Presentation (UNIT-3)**
	4th week	Arrays & Pointers: Definition, types, initialization, processing an array, passing arrays to functions. Declaration and initialization of string, Input/output of string data, Introduction to pointers.
November	1st / 2nd week	Pointers and memory management in C; File input/output operations in C; Dynamic memory allocation and deallocation; Advanced control structures: switch, break, and continue statements.
	3rd week	Algorithmic problem-solving using C programming constructs; Design and implementation of C programs; Debugging and testing techniques for C programs; Best practices and coding standards in C programming. **Revision/ Test (UNIT-4)**
	4th week	**Revision**

GOVERNMENT COLLEGE BAROTA GOHANA (SONIPAT)

Summary of Lesson Plans of College Faculty for Academic Session 2024 - 2025

Name of Assistant/Associate Professor:- Dr. AMIT RATHEE

Class:- B.Sc.- 3rd Sem. **From:- July, 24 – Dec., 24**

Subject:- "Data Communication & Networking" (3.1) **Semester:- ODD Semester**

Credits (L:T:P):- ------- **Hours/ Week:- -------**

Months	Week	Topics/ Chapters to be Covered
July	**4th week**	Introduction to Computer Communications and Networking Technologies;
	5th week	Uses of Computer Networks; Network Devices, Nodes, and Hosts;
August	**1st / 2nd week**	Types of Computer Networks and their Topologies;
	3rd week	Network Architecture and the OSI Reference Model
	4th week	TCP/IP reference model**. Revision/ Test (UNIT-1)**
	5th week	Analog and Digital Communications: Concept of data, signal, channel, bid-rate , maximum data-rate of channel
September	**1st week**	Representing Data as Analog Signals, Representing Data as Digital Signals, Data Rate and Bandwidth, Capacity, Baud Rate;
	2nd week	Asynchronous and synchronous transmission, data encoding techniques, Modulation techniques, Digital Carrier Systems; Guided and Wireless Transmission Media;
	3rd week	Communication Satellites; Switching and Multiplexing; Dialup Networking; Analog Modem Concepts. **Revision/ Test (UNIT-2)**
	4th week	Data Link Layer: Framing, Flow Control, Error Control; Error Detection and Correction;
October	**1st week**	Media Access Control: Random Access Protocols, Token Passing Protocols; Token Ring;
	2nd week	Introduction to Ethernet, FDDI, Wireless LANs. Network Layer and Routing Concepts: Virtual Circuits and Datagram's;
	3rd week	Routing Algorithms: Flooding, Shortest Path Routing, Distance Vector Routing; Internetworking. **Revision/ Test/ Presentation (UNIT-3)**
	4th week	Transport layer: Elements of Transport protocol: Addressing, Connection Establishment, Flow Control, Buffering, Crash recovery.
November	**1st / 2nd week**	Internet Transport protocol: UDP: Introduction, Real time Transport protocol, Remote Procedure Call.
	3rd week	Application Layer: Domain Name System, Electronic Mail, World Wide Web. **Revision/ Test (UNIT-4)**
	4th week	**Revision**

GOVERNMENT COLLEGE BAROTA GOHANA (SONIPAT)

Summary of Lesson Plans of College Faculty for Academic Session 2024 - 2025

Name of Assistant/Associate Professor:- Dr. AMIT RATHEE

Class:- B.Sc.- 3rd Sem. **From:- July, 24 – Dec., 24**

Subject:- "Introduction to Internet and Web Technologies" (5.2) **Semester:- ODD Semester**

Credits (L:T:P):- ------- **Hours/ Week:- -------**

Months	Week	Topics/ Chapters to be Covered
July	**4th week**	Introduction to Internet, Benefits of Internet, WWW, Hardware and software requirement for internet
	5th week	internet protocols, applications of internet,
August	**1st / 2nd week**	Internet Tools- Telnet, FTP,Gopher, Archie, Veronica, Mosaic,
	3rd week	WAIS, IRC, Online Chatting, Messaging, and Conferencing Concepts, resources of internet.
	4th week	**Revision/ Test (UNIT-1)**
	5th week	E-Mail mailing lists, Internet addressing, internet service provider (ISP),
September	**1st week**	Internet in India- Shell account, TCP/IP account, Home page and Web Site, internet accessing, internet terminology, internet security problems and solutions.
	2nd week	Overview of Intranet and its applications, Web Browsers, Search Engines, Categories of Search Engines, Searching Criterion,
	3rd week	Surfing the Net, Hypertext Transfer Protocol (HTTP), URL **Revision/ Test (UNIT-2)**
	4th week	HTML: Internet Language, Understanding HTML
October	**1st week**	Create a Web Page, Linking to other Web Pages, Publishing HTML Pages,
	2nd week	Text Alignment and Lists, Text Formatting Fonts Control
	3rd week	E-mail Links and link within a Page, Creating HTML Forms. **Revision/ Test/ Presentation (UNIT-3)**
	4th week	Creating Web Page Graphics, Putting Graphics on a Web Page
November	**1st / 2nd week**	Custom Backgrounds and Colors, Creating Animated Graphics. Web Page Design and layout,
	3rd week	Advanced Layout with Tables, Using Style Sheets. **Revision/ Test (UNIT-4)**
	4th week	**Revision**